

## PHD RESEARCH

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### **Race for Innovation and Patent Policies. Technological Developments in the Zinc Industry (1806-1873) -**

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In the young Belgian State, weakened by its international status, technological innovation appeared to be not only a national priority but also an efficient means to facilitate entrepreneurial development. As a consequence, a competition for innovation took place in the context of the Belgian industrial expansion of the 19<sup>th</sup> century.

This thesis focuses on the multiple issues of this competition. The first part analyses the establishment of the Belgian patent system. How was it designed by the first Belgian governments? Which were its characteristics? How did it promote competition for innovation? Through this viewpoint, references and singularities revealed by the legal frameworks of the patent system are highlighted. Furthermore, the analysis shows the impact of individual and collective patenting activities on the development of the system.

The second part of the thesis is devoted to a case study based on a sectoral approach. Through the study of the first European multinational enterprise – *S.A. des Mines et Fonderies de zinc de la Vieille-Montagne* – the relation between patents and technical innovation is discussed. What do patents reveal about technologies and their development? By which mechanisms do they contribute to innovation? The technical analysis of a series of 200 carefully selected patents is

achieved by resorting to company archives. It demonstrates the dynamic dimension of the innovative processes and the importance of steps like tests and errors, hesitations, failures. This technical history of the zinc sector also highlights the strategies defined by industrialists in order to overcome the major problems linked to the use of technologies, namely the imperfection of the reduction methods, pollution, mechanization and diversification.